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| Unit Title: Multiplication and Division of Decimals | Pacing (Duration of Unit): 5 Weeks |

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| **Desired Results** |

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| **Transfer Goals (**Priority practice standards in **bold)** |
| *Students will be able to independently use their learning to:*  MP.1. **Make sense of problems and persevere in solving them.**  MP.2. Reason abstractly and quantitatively.  MP.3. Construct viable arguments and critique the reasoning of others.  MP.4. **Model with mathematics.**  MP.5. Use appropriate tools strategically.  MP.6. **Attend to precision.**  MP.7**.** Look for and make use of structure.  MP.8. Look for and express regularity in repeated reasoning. |

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| **Established Goals (2011 MA Curriculum Frameworks Standards Incorporating the Common Core State Standards)** |

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| **Prerequisite Standards:**   * 4.NBT.5: Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.   + 4.NBT.MA.5a: Know multiplication facts and related division facts through 12 × 12. * 4.NBT.6: Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. | **WIDA for English Language Learners**  Standard 1: ELLs **communicate** for **Social** and **Instructional** purposes within the school setting  Standard 3: ELLs **communicate** information, ideas and concepts necessary for academic success in the content area of **Mathematics**  In the lesson planning stage, teachers will need to differentiate lessons for ELLs. In order to accomplish this they will need: 1.) This curriculum map, 2.) A list of their ELLs and their proficiency levels, and 3.) Appropriate language function expectations and scaffolds or supports. |
| **Standards (**Priority Standards in **bold**):   * 5.NBT.3: Read, write, and compare decimals to thousandths.   + 5.NBT.3a: Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., 347.392 = 3  100 + 4  10 + 7  1 + 3  (1/10) + 9  (1/100) + 2  (1/1000).   + 5.NBT.3b: Compare two decimals to thousandths based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons. * 5.NBT.4: Use place value understanding to round decimals to any place. * **5.NBT.5: Fluently multiply multi-digit whole numbers using the standard algorithm.** * **5.NBT.6: Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.** * **5.NBT.7:** Add, subtract, **multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations,** and/or the relationship between addition and subtraction**; relate the strategy to a written method and explain the reasoning used.** |  |

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| **Meaning (\*Mostly assessed through Performance Tasks/Assessments)** |

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| **Big Ideas:** (Statements and concepts written in teacher friendly language which reflect the important [but not obvious] generalizations we want students to be able to arrive at. These are used by the teacher to focus daily instruction.)   * There are a variety of strategies and models that can be used to represent and solve numerical expressions. * Multiplication and division are inverse operations. * The fact that multiplication is repeated addition and division is repeated subtraction holds true for decimals. * The rules for multiplication and division of whole numbers apply to decimals. | **Essential Questions:** (Questions which frame ongoing and important inquires about the big ideas. They are written for students and used in daily instruction to help engage students in meaningful thinking.)   * How are multiplication and division of whole numbers related to multiplication and division of decimals? * Why is place value important in multiplication and division? * What questions can be answered by multiplying and dividing decimals? |

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| **Acquisition (\*Mostly assessed through traditional summative assessments)** | |
| **Knowledge:** Key basic concepts, facts, and key terms (written in phrases) students should be able to recall independently.  ***Students will know…***   * The relationship between multiplication and division (inverse operations) * The rules of multiplication and division of whole numbers and decimals are the same.   **Key Academic Vocabulary:**   * Multiplication Standard Algorithm * Division Standard Algorithm * Visual Representations (array, area model, drawings) * Quotient, Divisor, Dividend * Factor, Product, Multiple | **Skills:** The discrete skills and process students should be able to use independently  *Students will be skilled at:*   * Computing products of multi-digit whole numbers using the standard algorithm fluently. * Formulating solutions to whole number quotients of whole numbers using multiple strategies/methods. * Selecting and using appropriate methods/strategies to solve multiplication and division of whole numbers and decimals. * Estimating reasonableness of answers. |

**Resource Suggestions:**

**Add decimals game** [**http://pbskids.org/cyberchase/math-games/railroad-repair/**](http://pbskids.org/cyberchase/math-games/railroad-repair/)

**Explanation/ Worksheet Practice** [**http://www.mathsisfun.com/adding-decimals.html**](http://www.mathsisfun.com/adding-decimals.html) **<http://www.mathsisfun.com/subtracting-decimals.html>**

**Interactive Games** [**http://interactivesites.weebly.com/math.html**](http://interactivesites.weebly.com/math.html) *(Click on unit topic)*

**Common Core Georgia Performance Standards:** Multiplying & Dividing Whole Numbers

**Common Core Georgia Performance Standards:** Multiplying & Dividing Decimals

**Illustrative mathematics:** [http://www.illustrativemathematics.org/5](http://www.google.com/url?q=http%3A%2F%2Fwww.illustrativemathematics.org%2F5&sa=D&sntz=1&usg=AFQjCNEL2QGu1AzYyI81huTcK8QWatCjcA)

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| Standard(s) | [Link](http://www.illustrativemathematics.org/5) |
| 5.NBT.5 | [5.NBT Elmer’s Multiplication Error](https://www.illustrativemathematics.org/illustrations/1812) |
| 5.NBT.6 | [5.MD Minutes and Days](http://www.illustrativemathematics.org/illustrations/878) |
| 5.NBT.7 | [5.NF What is 23 ÷ 5?](http://www.illustrativemathematics.org/illustrations/292)  <http://www.illustrativemathematics.org/illustrations/1293> |

**K-5 Math Resources** <http://www.k-5mathteachingresources.com/5th-grade-number-activities.html>

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| Standard(s) | [Link](http://www.k-5mathteachingresources.com/5th-grade-number-activities.html) |
| 5.NBT.5 | [Make the Largest Product](http://www.k-5mathteachingresources.com/support-files/makethelargestproduct.pdf)  [Make the Smallest Product](http://www.k-5mathteachingresources.com/support-files/makethesmallestproduct.pdf) |
| 5.NBT.6 | [Division Strategy: Partial Quotients (3)](http://www.k-5mathteachingresources.com/support-files/division-strategy-partial-quotients3.pdf)  [Division Strategy: Partition the Dividend](http://www.k-5mathteachingresources.com/support-files/division-strategy-partition-the-dividend.pdf)  [Division Strategy: Multiplying Up](http://www.k-5mathteachingresources.com/support-files/division-strategy-multiplying-up.pdf)  [Estimating Quotients](http://www.k-5mathteachingresources.com/support-files/estimating-quotients.pdf)  [Creating and Solving a Division Problem](http://www.k-5mathteachingresources.com/support-files/creatingandsolvingadivisionproblem5nbt6.pdf) |

**Interactive Multiplication Tool:** <http://www.mathsisfun.com/tables.html>

Technology (videos)

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| **Standards** | **Link** |
| 5.NBT.5 | [**Online Lesson Plan for 2-Digit by 1-Digit Multiplication - NCTM**](http://illuminations.nctm.org/LessonDetail.aspx?id=L858)  [**Khan Video: Lattice Multiplication**](http://www.khanacademy.org/math/arithmetic/multiplication-division/v/lattice-multiplication)  [**Video: Brain Pop - Distributive Property**](http://www.brainpop.com/math/numbersandoperations/distributiveproperty/preview.weml) |
| 5.NBT.6 | [Videos: Series of Videos - Multiplication of Decimals](http://www.onlinemathlearning.com/multiply-decimals-2.html)  [Online Game: Decimals Jeopardy](http://www.math-play.com/Decimals-Jeopardy/decimals-jeopardy.html)  [Virtual Manipulative: Area Model for Division (NLVM)](http://nlvm.usu.edu/en/nav/frames_asid_193_g_2_t_1.html)  [Video: Multiplication and Division of Decimals](http://www.learnalberta.ca/content/me5l/html/Math5.html?launch=true) |
| 5.NBT.7 | [Virtual Manipulative: Decimal Tiles](http://www.abcya.com/decimal_tiles.htm) |
| 5.NBT.5 | <http://www.khanacademy.org/math/cc-fifth-grade-math/cc-5th-arith-operations/cc-5th-sub-decimals> |
| 5.NBT.6 | <http://www.khanacademy.org/math/cc-fifth-grade-math/cc-5th-arith-operations/cc-5th-division>  <http://www.khanacademy.org/math/cc-fifth-grade-math/cc-5th-arith-operations/cc-5th-dividing-decimals> |
| 5.NBT.7 | <http://www.khanacademy.org/math/cc-fifth-grade-math/cc-5th-arith-operations/cc-5th-multiplication> |

**GO MATH**

**STANDARDS:** 5NBT3; 5NBT4; **5NBT5; 5NBT6; 5NBT7**

**\*\*\* All lessons pertaining to 5NBT3, 4, and 7 correspond to Unit Guide 1 & 2 as well as Unit Guide 3.**

In addition (**bold** print: **priority standards**):

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| **STANDARDS** | **LESSON #** | **LESSON TITLE** |
| **5NBT6** | **1.3** | **Algebra - Properties** |
| **5NBT5** | **1.6** | **Multiply by 1-Digit Numbers** |
| **5NBT5** | **1.7** | **Multiply by 2-Digit Numbers** |
| **5NBT6** | **1.8** | **Relate Multiplication & Division** |
| **5NBT6** | **1.9** | **Problem Solving - Multiplication & Division** |
| **5NBT6** | **2.1** | **Place the First Digit** |
| **5NBT6** | **2.2** | **Divide by 1-Digit Numbers** |
| **5NBT6** | **2.3** | **Investigate: division with 2-Digit Divisors** |
| **5NBT6** | **2.4** | **Partial Quotients** |
| **5NBT6** | **2.5** | **Estimate with 2-Digit Divisors** |
| **5NBT6** | **2.6** | **Divide by 2-Digit Divisors** |
| 5NF3 | 2.7 | Interpret the Remainder  (goes with standards in Unit 5 but corresponds to unit 3 planning guide as well) |
| **5NBT6** | **2.8** | **Adjust Quotients** |
| **5NBT6** | **2.9** | **Problem Solving - Division** |
| 5NBT2**, 5NBT7** | **4.1** | **Algebra - Multiplication Patterns with Decimals** |
| **5NBT7** | **4.2** | **Multiply decimals & Whole Numbers** |
| 5NBT2; **5NBT7** | **4.3** | **Multiplication with decimals & Whole Numbers** |
| 5NBT2, **5NBT7** | **4.4** | **Multiply Using Expanded Form** |
| **5NBT7** | **4.5** | **Problem Solving- Multiply Money** |
| 5NBT2; **5NBT7** | **4.6** | **Investigate - Decimal Multiplication** |
| 5NBT2, **5NBT7** | **4.7** | **Multiply Decimals** |
| 5NBT2, **5NBT7** | **4.8** | **Zeros in the Product** |